SANTA CRUZ BIOTECHNOLOGY, INC.

PTN (N-15): sc-1395

BACKGROUND

Pleiotrophin (PTN) and midkine (MK) comprise a family of structurally related, developmentally regulated genes. Human PTN is synthesized as a 168 amino acid precursor which is subsequently cleaved to generate a 136 amino acid protein. Human PTN is approximately 50% identical to human MK, with conservation of all 10 cysteines. Cells reported to express PTN include osteoblasts, chondrocytes, fibroblasts, astrocytes, oligodendroglia, Schwann cells, neurons, pituicytes and Leydig cells. PTN is a heparin-binding growth factor that functions as a weak mitogen and promotes neurite-outgrowth from embryonic brain neurons. PTN is expressed at high levels in many tissues during fetal development, but becomes restricted to the brain in adult animals.

REFERENCES

1. Li, Y.S., et al. 1990. Cloning and expression of a developmentally regulated protein that induces mitogenic and neurite outgrowth activity. Science 250: 1690-1694.
2. Bohlen, P., et al. 1991. HBNF and MK, members of a novel gene family of heparin-binding proteins with potential roles in embryogenesis and brain function. Prog. Growth Factor Res. 3: 143-157.
3. Raulais, D., et al. 1991. A new heparin binding protein regulated by retinoic acid from chick embryo. Biochem. Biophys. Res. Commun. 174: 708-715.
4. Li, Y.S., et al. 1992. Characterization of the human pleiotrophin gene: promoter region and chromosomal localization. J. Biol. Chem. 267: 26011-26016.
5. Milner, P.G., et al. 1992. Cloning, nucleotide sequence, and chromosome localization of the human pleiotrophin gene. Biochemistry 31: 12023-12028.
6. Vanderwinden, J.M., et al. 1992. Cellular distribution of the new growth factor pleiotrophin (HB-GAM) mRNA in developing and adult rat tissues. Anat. Embryol. 186: 387-406.

CHROMOSOMAL LOCATION

Genetic locus: PTN (human) mapping to 7q33; Ptn (mouse) mapping to 6 B1.

SOURCE

PTN (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of PTN of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1395 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

PTN (N-15) is recommended for detection of precursor and mature PTN of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PTN (N-15) is also recommended for detection of precursor and mature PTN in additional species, including porcine.

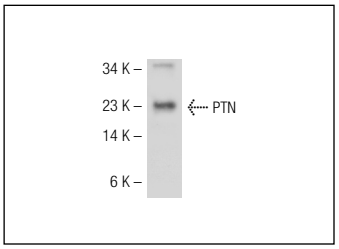
Suitable for use as control antibody for PTN siRNA (h): sc-39713, PTN siRNA (m): sc-39714, PTN shRNA Plasmid (h): sc-39713-SH, PTN shRNA Plasmid (m): sc-39714-SH, PTN shRNA (h) Lentiviral Particles: sc-39713-V and PTN shRNA (m) Lentiviral Particles: sc-39714-V.

Molecular Weight (predicted) of PTN: 18 kDa.

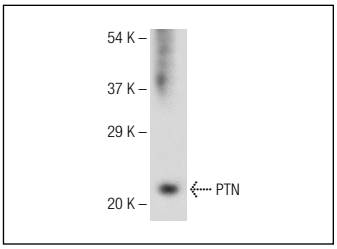
Molecular Weight (observed) of PTN: 18-25 kDa.

Positive Controls: rat brain extract: sc-2392 or HeLa nuclear extract: sc-2120.

DATA



PTN (N-15): sc-1395. Western blot analysis of PTN expression in rat brain tissue extract.



PTN (N-15): sc-1395. Western blot analysis of purified human PTN.

SELECT PRODUCT CITATIONS

1. Schulte, A.M., et al. 2000. Influence of the human endogenous retrovirus-like element HERV-E.PTN on the expression of growth factor pleiotrophin: a critical role of a retroviral Sp1-binding site. Oncogene 19: 3988-3998.
2. Tanaka, M., et al. 2003. A chondroitin sulfate proteoglycan PTPζ /RPTPβ regulates the morphogenesis of Purkinje cell dendrites in the developing cerebellum. J. Neurosci. 23: 2804-2814.
3. Polykratis, A., et al. 2005. Characterization of heparin affin regulatory peptide signaling in human endothelial cells. J. Biol. Chem. 280: 22454-22461.

RESEARCH USE

For research use only, not for use in diagnostic procedures.